

# **HD CCTV Digital Video Camera**

## **OPERATION MANUAL**



Thank you for choosing our high quality camera.  
Before attempting to connect operate this unit, please read and follow these instructions.

## **CAUTION**

**These servicing instructions are for use by qualified service personnel only. To reduce the risk of electric shock do not perform any servicing other than that contained in the operating instructions unless you are qualified to do so.**

**Use Class 2 Power Supply Only**

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# 1. CAUTIONS

**This device complies with Part 15 of the FCC Rules.  
Operation is subject to the following two conditions;**

1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.

## Note

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense."

## WARNING

This is a class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

## Caution

Any changes or modifications in construction of this device which are not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

### CAUTION

1. A regulated DC12V 2A power supply is recommended for use with this camera for the best picture and the most stable operation.  
**An unregulated power supply can cause damage to the camera.**  
**When unregulated power supply is applied, product warranty will be out of subject.**
2. It is recommended that the camera is used with a monitor that has a CCTV quality 75 video impedance level.  
If your monitor is switched to high impedance then please adjust accordingly.
3. Do not attempt to disassemble the camera to gain access to the internal components. Refer servicing to your dealer.
4. Never face the camera towards the sun or any bright or reflective light, which may cause smear on the picture and possible damage to the CCD.
5. **Do not remove the serial sticker for the warranty service.**
6. Do not expose the camera to rain or other types of liquid.
7. The apparatus must be connected to a mains socket-outlet with a protective earthing connection.

# 1. CAUTIONS



## Correct Disposal of This Product (Waste Electrical & Electronic Equipment)

**(Applicable in the European Union and other European countries with separate collection systems)**

This marking shown on the product or its literature, indicate that it should not be disposed with other household wastes at the end of its working life. To prevent possible harm to the environment or human health from uncontrolled waste disposal, please separate this from other types of wastes and recycle it responsibly to promote the sustainable reuse of material resources.

This product should not be mixed with other commercial wastes purchased this product, or their local government office, for details of where and how they can take item for environmentally safe recycling.

Business users should contact their supplier and check the terms and conditions of the purchase contract.

Household users should contact either the retailer where they for disposal.



### CAUTION

RISK OF ELECTRIC SHOCK DO NOT OPEN



CAUTION : TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.



This symbol is intended to alert the user to the presence of uninsulated “dangerous voltage” within the product’s enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



This symbol is intended to alert the user to the presence of important operating and maintenance(servicing) instructions in the literature accompanying the appliance

## 2. IMPORTANT SAFETY INSTRUCTION

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- 1) Read these instructions.
- 2) Keep these instructions.
- 3) Heed all warnings.
- 4) Follow all instructions.
- 5) Do not use this apparatus near water.
- 6) Clean only with dry cloth.
- 7) Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
- 8) Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
- 9) Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
- 10) Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
- 11) Only use attachments/accessories specified by the manufacturer.
- 12) Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
- 13) Unplug this apparatus during lightning storms or when unused for long periods of time.
- 14) Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

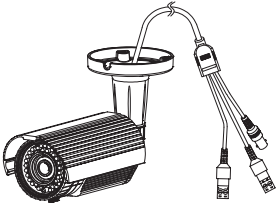






### 3. FEATURES

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- **High Resolution**  
SONY 1/2.8" Progressive Color CMOS Image Sensor,  
1920x1080
- **Support various digital video output**  
720p30, 720p60, 720p25, 720p50,  
1080i60, 1080i50,  
1080p30, 1080p25
- **Video Outputs**  
Primary HD-SDI (BNC)  
Test/Setup TV Out (Test Point-adaptor to BNC included), NTSC/PAL selectable.
- **OSD menu for setup and configuration**
- **Support RS485 Communication Protocol for Camera Configuration Remote Control**
- **Lens Control : DC Iris.**
- **45 Long Life IR illuminations for 0 Lux viewing performance and range to 45m(150 feet).**
- **Provides True Day/Night Capability with Motorized IR Cut Filter.**
- **Power Source : DC 12V / AC24V.**
- **IP67 Weather Resistant.**
- **HDcctv Alliance Base Line Compliance**
- **The HDcctv Alliance states.**
- **Look for the unique HDcctv logo to be sure.**
  - 100m transmissions over even to be sure.
  - Plug-and-Play interoperability with other compliant products.
  - Forward compatibility with future versions of the standard.
  - See [www.hidefcctv.org](http://www.hidefcctv.org) for details.

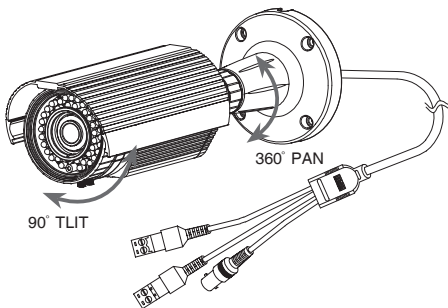
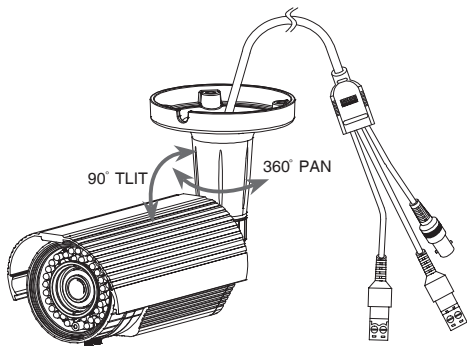
## 4. EQUIPMENT AND ACCESSORIES

<p>HD CCTV Digital Video Camera</p>	
<p>SERVICE VIDEO OUTPUT TEST CABLE</p>	
<p>L - WRENCH</p>	
<p>OPERATION MANUAL</p>	
<p>SCREW - 4ea</p>	



## 5. INSTALLATION

### • CAMERA MOUNTING POSITION

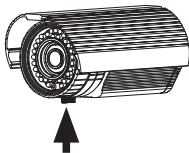
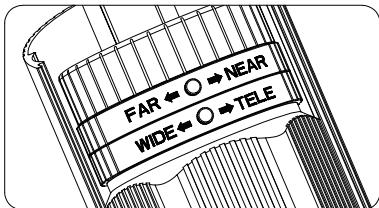


**<Cable Concealed Thru Bracket>**

## 5. INSTALLATION

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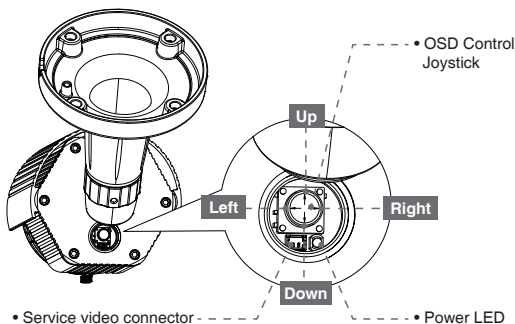
- External Zoom & Focus Adjustable



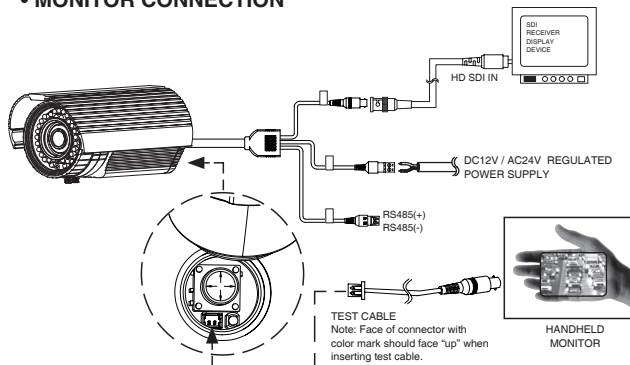
The workmanship to adjust zoom and focus, opening the window cap might cause the humidity problems to the camera. The External Zoom and Focus system with out state-of-the-art technology provides easy camera installation without opening the window cap to adjust zoom and focus the lens.

## 5. INSTALLATION

### • Service Video Out & OSD Control



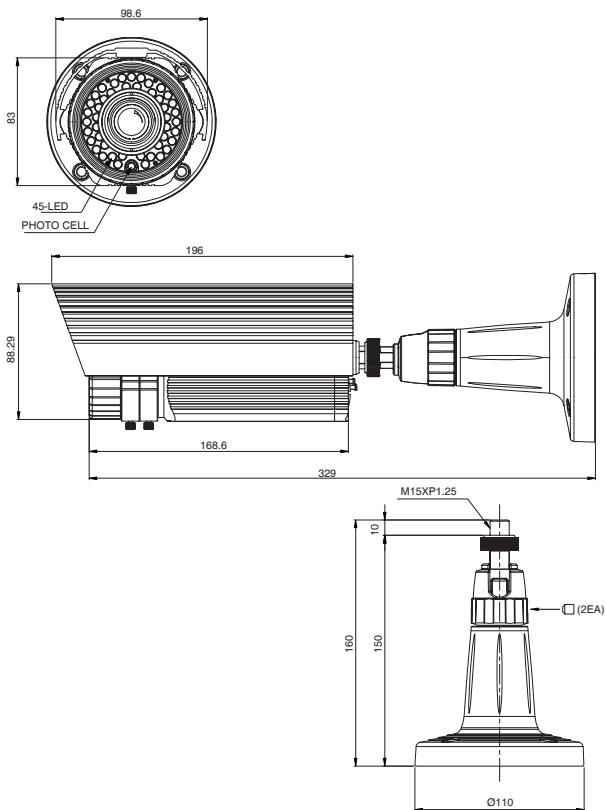
### • MONITOR CONNECTION



When you install the camera, please seal the ends of cables to protect the camera connections from humidity problems.

## 6. DIMENSIONS

Unit(mm)



## 7. SPECIFICATION

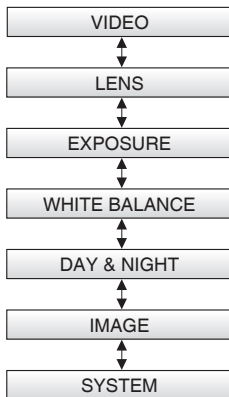
Image Device	SONY 1/2.8" Progressive Color CMOS Image Sensor
Effective Pixels	2096 (H) x 1561 (V) 60fps
Unit cell size	2.5um (H) x 2.5um (V)
Video output mode	HD-SDI : 720p30, 720p60, 720p25, 720p50, 1080i60, 1080i50, 1080p30, 1080p25 TV Out : NTSC / PAL selectable
Minimum illumination	0 Lux
IR LED	850nm, 45ea
IR Beam Range	Up to 45M (150 Feet)
S/N Ratio	Max 50dB
Shutter speed	Auto / Manual selectable
Min. Exposure Time	1/10000 sec
Flickerless	Off / 60Hz(50Hz) selectable
True Day & Night	IR Cut / Pass Filter change
White Balance	ATW / Manual / Specific Color / Push
BLC	On/Off (by OSD)
Lens	DC IRIS Varifocal Lens(ICR)
OSD Menu	Yes
Power Consumption	DC 12V (±10%) Max. 1.1A AC 24V (±10%) Max. 12W
IP Rating	IP67
Weight	2000g
Conformity	CE, FCC, HDcctv Alliance Base-Line Compliance
Temperature/Humidity (no condensing)	Operation : -10~50 / 20~80% Storage : -20~70 / 20~95%

Specifications and designs are subject to change for improving the functionality of this product without notice.

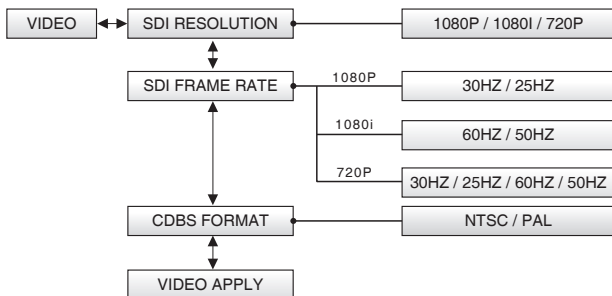
## 8. OSD MANUAL

### • Menu structure

#### - Main Menu

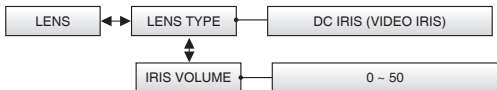


#### - VIDEO OUT Menu

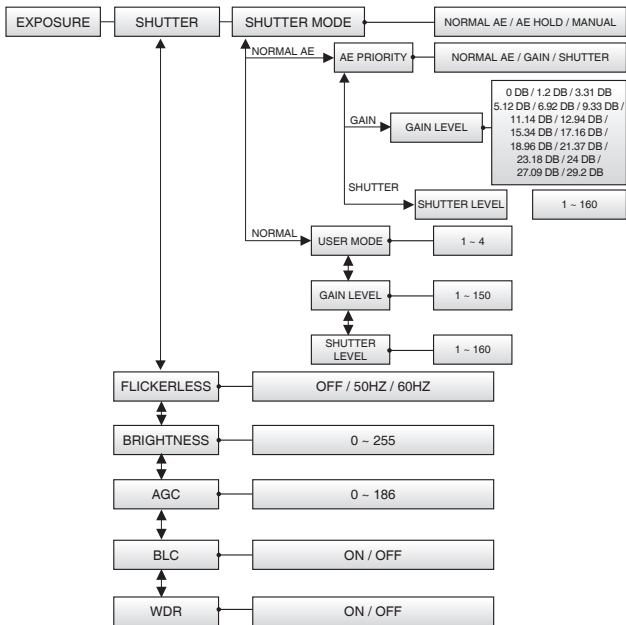


## 8. OSD MANUAL

### - LENS Menu

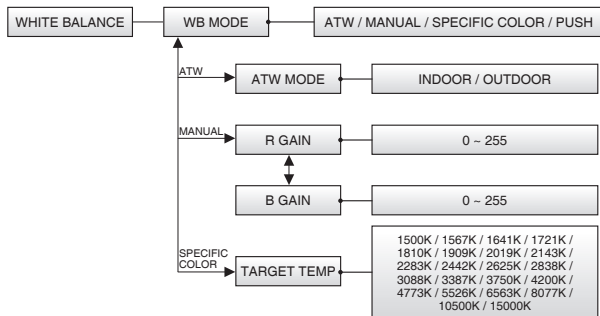


### - EXPOSURE Menu

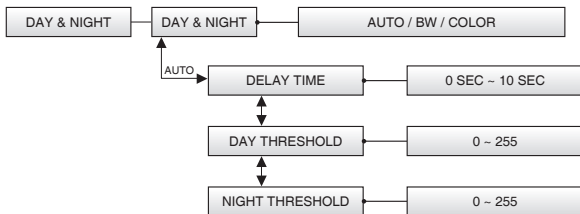


## 8. OSD MANUAL

### - WHITE BALANCE Menu



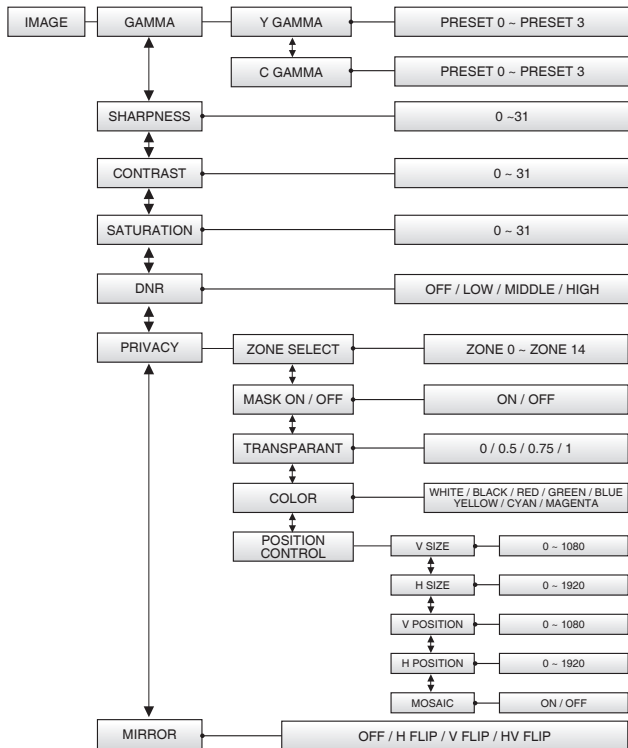
### - DAY / NIGHT Menu





## 8. OSD MANUAL

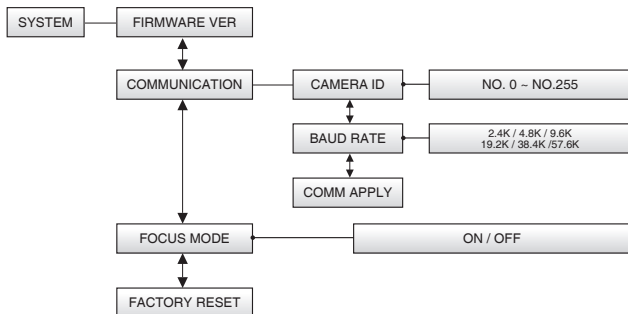
### - IMAGE Menu



## 8. OSD MANUAL

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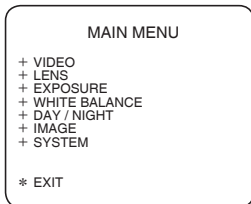
### - SYSTEM Menu



## 8. OSD MANUAL

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- Main Menu



- **VIDEO** : Select SDI out format and TV out format.
- **LENS** : Select the IRIS type and adjust the IRIS control value.
- **EXPOSURE** : Adjust exposure control.
- **WHITE BALANCE** : Adjust white balance control.
- **DAY / NIGHT** : Day & Night control.
- **IMAGE** : Apply image processing effects.
- **SYSTEM** : System information & setting.
- **EXIT** : Close OSD Menu.

## 8. OSD MANUAL

### • Video

#### VIDEO OUT

\* SDI RESOLUTION            1080p  
\* SDI FRAME RATE        30HZ  
\* CVBS FORMAT            NTSC  
+ VIDEO APPLY

\* ESC  
\* EXIT

#### - SDI RESOLUTION

Use the LEFT/RIGHT button to select the SDI output video resolution - 720p, 1080i, 1080p

\* Note : When the OSD menu is not displayed on video, 720p resolution can be selected by pressing the UP button in 3 seconds. Similarly, 1080p resolution can be selected by pressing the DOWN button in 3 seconds.

#### - SDI FRAME RATE

Use the LEFT/RIGHT button to select the SDI output video frame rate

SDI resolution	Available frame rate
1080p	30Hz, 25Hz
1080i	60Hz, 50Hz
720p	30Hz, 25Hz, 60Hz, 50Hz

#### - CVBS FORMAT

Use the LEFT/RIGHT button to select the TV out video format - NTSC, PAL

\* Note : When the OSD menu is not displayed on video, NTSC video format can be selected by pressing the LEFT button. Similarly, PAL video format can be selected by pressing the RIGHT button.

#### - VIDEO APPLY

Apply all video setting changed at once. Use the SET button to apply.

#### - ESC

Back to the previous menu page.

### • LENS

#### LENS

\* LENS TYPE                    DC IRIS  
\* IRIS VOLUME                25

\* ESC  
\* EXIT

#### - LENS TYPE

Lens type for iris control.

- DC IRIS only

#### - IRIS VOLUME

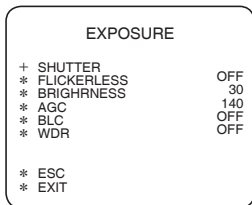
Use the LEFT/RIGHT button to adjust the iris volume level.

Iris volume control does not apply when the LENS TYPE is set to MANUAL IRIS.

## 8. OSD MANUAL

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### • EXPOSURE



#### - SHUTTER

Use the SET button to go to the SHUTTER sub menu.

#### - FLICKERLESS

Use the LEFT/RIGHT button to select the flickerless control setting - OFF, 60Hz, 50Hz.

#### - BRIGHTNESS

Use the LEFT/RIGHT button to adjust the brightness reference level.

#### - AGC

Use the LEFT/RIGHT button to adjust the AGC max value

#### - BLC

Use the LEFT/RIGHT button to select ON/OFF the Back-Light Compensation control.

#### - WDR

Use the LEFT/RIGHT button to select ON/OFF the Wide Dynamic Range effect control.

## 8. OSD MANUAL

### • SHUTTER (Sub Menu)

<div>SHUTTER</div> <div>* SHUTTER MODE    NORMAL AE</div> <div>* AE PRIORITY        NORMAL</div> <div> </div> <div>* ESC</div> <div>* EXIT</div>	<div>SHUTTER</div> <div>* SHUTTER MODE    NORMAL AE</div> <div>* AE PRIORITY        GAIN</div> <div>* GAIN LEVEL            0 DB</div> <div> </div> <div>* ESC</div> <div>* EXIT</div>	<div>SHUTTER</div> <div>* SHUTTER MODE    NORMAL AE</div> <div>* AE PRIORITY        SHUTTER</div> <div>* SHUTTER LEVEL        25</div> <div> </div> <div>* ESC</div> <div>* EXIT</div>
<div>SHUTTER</div> <div>* SHUTTER MODE    AE HOLD</div> <div> </div> <div>* ESC</div> <div>* EXIT</div>	<div>SHUTTER</div> <div>* SHUTTER MODE    MANUAL</div> <div>* USER MODE            1</div> <div>* GAIN LEVEL            20</div> <div>* SHUTTER LEVEL        50</div> <div> </div> <div>* ESC</div> <div>* EXIT</div>	

#### - SHUTTER MODE

Use the LEFT/RIGHT button to select shutter & gain control mode

- NORMAL AE, AE HOLD, MANUAL.

#### - AE PRIORITY

This menu can be accessed when the SHUTTER MODE is set to NORMAL AE.

Use the LEFT/RIGHT button to select the AE control priority setting.

- NORMAL, GAIN, SHUTTER.

#### - USER MODE

This menu can be accessed when the SHUTTER MODE is set to MANUAL.

Use the LEFT/RIGHT button to select the user mode(1~4) to save setting.

#### - GAIN LEVEL

In GAIN priority mode at NORMAL AE mode.

This menu can be accessed when the SHUTTER MODE is set to NORMAL AE and AE PRIORITY is set to GAIN.

Use the LEFT/RIGHT button to select the Gain value setting.

#### - GAIN LEVEL

In MANUAL mode.

This menu can be accessed when the SHUTTER MODE is set to MANUAL.

Use the LEFT/RIGHT button to select the Gain level setting.

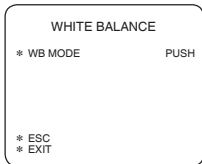
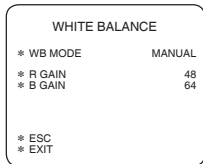
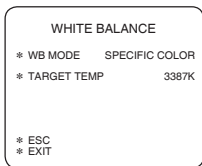
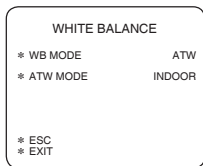
#### - SHUTTER LEVEL

This menu can be accessed when the SHUTTER MODE is set to MANUAL.

Use the LEFT/RIGHT button to select the Shutter level setting.

## 8. OSD MANUAL

### • WHITE BALANCE



#### - MODE

Use the LEFT/RIGHT button to select White balance modes

- ATW, MANUAL, SPECIFIC COLOR, PUSH

ATW	Auto trace white balance mode
MANUAL	Manual white balance mode
SPECIFIC COLOR	Manual setting with target color temperature
PUSH	White Balance Push mode to Auto AWB

#### - ATW MODE

This menu can be accessed when the WB MODE is set to ATW.

Use the LEFT/RIGHT button to select environment setting. - INDOOR, OUTDOOR

#### - TARGET TEMP

This menu can be accessed when the WB MODE is set to SPECIFIC COLOR.

Use the LEFT/RIGHT button to select target color temperature.

#### - R GAIN

This menu can be accessed when the WB MODE is set to MANUAL.

Use the LEFT/RIGHT button to adjust the Red Gain.

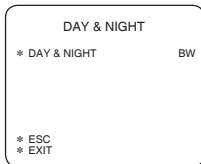
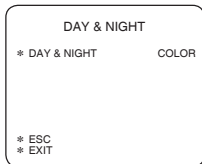
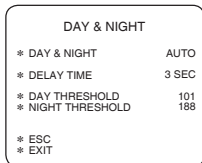
#### - B GAIN

This menu can be accessed when the WB MODE is set to MANUAL.

Use the LEFT/RIGHT button to adjust the Blue Gain.

## 8. OSD MANUAL

### • Day / Night



#### - DAY & NIGHT:

Use the LEFT/RIGHT button to select Day & Night modes - AUTO, COLOR, BW

AUTO	Auto controlled by signal from CDS sensor. (CDS Type)
COLOR	Fixed Day State. Color Image.
BW	Fixed Night State. BW Image.

#### - DELAY TIME:

This menu can be accessed when the DAY & NIGHT is set to AUTO.  
Use the LEFT/RIGHT button to select state change delay time.

#### - DAY THRESHOLD:

This menu can be accessed when the DAY & NIGHT is set to AUTO.  
Use the LEFT/RIGHT button to select threshold value of change from night state to day state.

#### - NIGHT THRESHOLD:

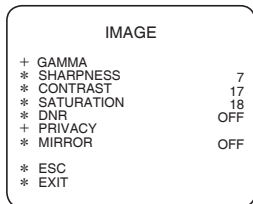
This menu can be accessed when the DAY & NIGHT is set to AUTO.  
Use the LEFT/RIGHT button to select threshold value of change from day state to night state.



## 8. OSD MANUAL

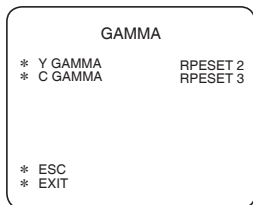
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### • IMAGE



- **GAMMA:** Use the SET button to go to the GAMMA sub menu.
- **SHARPNESS:** Use the LEFT/RIGHT button to adjust the sharpness value.
- **CONTRAST:** Use the LEFT/RIGHT button to adjust the contrast value.
- **SATURATION:** Use the LEFT/RIGHT button to adjust the saturation level.
- **DNR:** Use the LEFT/RIGHT button to select the digital noise reduction level. - OFF, LOW, MIDDLE, HIGH
- **PRIVACY:** Use the SET button to go to the PRIVACY MASK sub menu.
- **MIRROR:** Use the SET button to select image flip modes.
  - OFF, H FLIP, V FLIP and H/V FLIP.

### • GAMMA (Sub Menu)

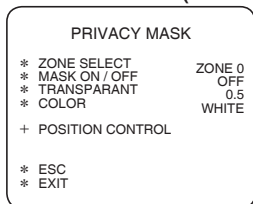


- **Y GAMMA:** Use the LEFT/RIGHT button to select preset gamma setting for luma.
- **C GAMMA:** Use the LEFT/RIGHT button to select preset gamma setting for chroma.

## 8. OSD MANUAL

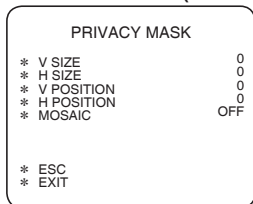
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### • PRIVACY MASK (Sub Menu)



- **ZONE SELECT:** Use the LEFT/RIGHT button to select the mask zone number to setting.
- **MASK ON/OFF:** Use the LEFT/RIGHT button to select ON/OFF the mask that is zone selected.
- **TRANSPARENT:** Use the LEFT/RIGHT button to adjust the mask transparent level.
- **COLOR:** Use the LEFT/RIGHT button to select the mask color.
- **POSITION CONTROL:** Use the SET button to go to the mask position setting sub menu

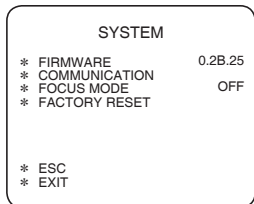
### • PRIVACY MASK (Sub Menu)



- **V SIZE:** Use the LEFT/RIGHT button to adjust the mask vertical size.
- **H SIZE:** Use the LEFT/RIGHT button to adjust the mask horizontal size.
- **V POSITION:** Use the LEFT/RIGHT button to adjust the mask vertical position.
- **H POSITION:** Use the LEFT/RIGHT button to adjust the mask horizontal position.
- **MOSAIC:** Use the LEFT/RIGHT button to select ON/OFF the mask mosaic setting.

## 8. OSD MANUAL

### • SYSTEM



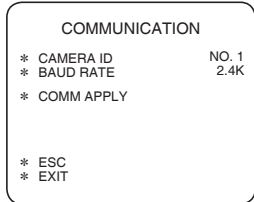
- **FIRMWARE VER :** Information of camera's firmware version.

- **COMMUNICATION:** Use the SET button to go to the COMMUNICATION sub menu.

- **FOCUS MODE:** In Focus mode, the iris becomes fully open, electronic shutter controls the light level, and the TV out screen zooms into the center in order to make focusing easier. When in Focus Mode, the OSD menu is not displayed.

- **FACTORY RESET:** Use the SET button to action start of reset. Clear all setting and initialize to factory setting.

### • COMMUNICATION (Sub Menu)

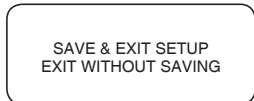


- **CAMERA ID :** Use the LEFT/RIGHT button to select the RS485 ID Address.

- **BAUD RATE :** Use the LEFT/RIGHT button to select the baudrate setting for RS485 communication.

- **COMM APPLY :** Apply all communication setting changed at once. Use the SET button to apply.

### • EXIT



This menu can be accessed when use the EXIT action in all menu pages.

- **SAVE & EXIT SETUP:**

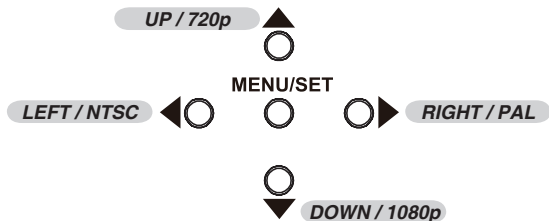
Save all current setting and Close OSD menu. These setting are loaded and applied automatically when the Camera is power on.

- **EXIT WITHOUT SAVING:**

Close OSD menu. Camera's current setting is not saved. Use the SET button to action.

## Quick Setup Guide(HD CCTV CAMERA)

### ■ OSD Menu Button.



#### - Video out Format Change (NTSC/PAL Selection)

Default(Factory default setting) video out format is NTSC.

Camera power on & Until push the SET button(While OSD menu is not displayed on video), Can select NTSC/PAL video format output on VIDEO port - Push the LEFT button to select NTSC format video out mode or Push the RIGHT button to select PAL format video out mode.

**\*Warning :** When HD-SDI out format is setted 1080P, NTSC/PAL video out is not supported. While OSD menu is not displayed on video, Can select 1080P/720P format output on HD-SDI port - Push the UP button in 3 seconds to select 720P format video out or Push the DOWN button in 3 seconds to select 1080p format video out.

#### - OSD menu Display on Video

Push the SET button.

#### - Use the Focus mode

Can be found in SYSTEM menu section in OSD menu.

Use the LEFT/RIGHT button to select ON/OFF the Focus mode.

### • Video output port

#### - HDcctv 1.0 OUTPUT (BNC) :

HD-SDI video out to HDcctv DVR or Other HDcctv Signal Equipment.

#### - VIDEO (BNC) :

NTSC or PAL video out to Hand-Held Test Equipment(TV Monitor).

### • Focus Mode

In the Focus mode, the Iris becomes fully open and the TV out screen zooms into the center in order to make focusing easier.

When turn on the Focus mode, the OSD menu display is turned off automatically and when turn off the focus mode, the OSD menu display is back.